Table . Distribution of species recorded from the collections made in the ~~Northern~~ Marshall and Marianas Islands. The numbers indicate the number of stations at which the species was collected.

blue = N. Marshalls.
Green = Marianas
red = n. of ♂ from Marshalls
black = S. Marshall

Family, genus and species.			Marshall Islands Atolls						Marianas Isl			
			Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	~~Northern~~ Marshall Islands	Guam	Saipan	Rota
Asymmetrontidae												
Notasymmetron caudatum	1		1									
Tsuridae												
Carcharodon carcharias	2		2									
Orectolobidae												
Ginglymostoma ferrugineum	3		2									
Triakidae												
Triaenodon obesus	4		1									
Carcharhinidae												
Galeocerdo cuvier	5		1									
Hemigaleops forsteri	1	*6	1									
Carcharhinus albimarginatus	7		1				1					
" brachyurus	8								2(n)			
" melanopterus	9		4	1		1						
" menisorrah	10		3	1			1					
Dasyatidae												
Taeniura brocki	2	*11	1									
Mobulidae												
Manta alfredi	12		1									
Dussumieridae												
Dussumieria hasselti	13		1									
Spratelloides delicatulus	14		8	7	2	4	1	1				
" atrofasciatus	15		8	6	2							
Synodontidae												
Saurida gracilis	16		14	9	3	2	1					1
Synodus binotatus	3	*17	5	5	1							
" variegatus	18		10	8	2			1		2		
" englemani	4	*19	4	1								
Myctophidae												
Myctophum brachygnathos	20		1			1						
Diaphus schmidti	21					1						
Anguillidae												
Anguilla marmorata	1									1		
Ophichthidae												
Brachysomophis sauropsis	22		3	1	3	1						
Cirricaecula johnsoni	5	*23			1							
Myrichthys maculosus	24		1		1			1				
" colubrinus	25				1					2		
" elaps	2											
" semicinctus	16		1			1						1
Callechelys melanotaenia	27		2			2						
" marmoratus	28		1	1		2						
Leiuranus semicinctus	29		21	7	3	3			1	3		

S = South Mar.

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Lib. Isl.	Marshall Island	Guam	Saipan	Rota
Echelidae											
Kaupichthys diodontus		30 7	2	1							
" atronasus	6	*31 1	1								
" brachychirus	7	*32 4	1	1	1						
Myrophis wilsoni		33	1		2						
Muraenichthys macropterus		34 1									
" sibogae	1							1 (S)			
" schultzei		35 7	4	1	2						
" gymnotus		36 14	4	1	3						
" ladigesi		37 33	5	3	7				2		
Leptenchelys finnacepsa		*38 1			1						
" labialis		39 4	1		1			1			
Schultzidia retrofinnis		40 1		1							
" johnstonensis	9	*41 1									
Congridae											
Conger noordziecki		42 9	5	1	4	1			4		
Uroconger oligod		43	2								
Moringuidae											
Moringua abbreviata		44 20	8	4	5	1	1		3		
" javanica		45 4			1		1				
" macrocephala		46 4			1						
" macrochir		47 3	1			1			4		
" bicolor		48 5	2		1		1		1		
" ~~calebroca~~ linearis		49 1									
Muraenidae											
Rhinomuraena quaesita	2	4						1 (S)			
Echidna zebra		50 4		1							
" polyzona		51 3			1						
" nebulosa		52 4	1	1					5		
" leucotaenia		53 11	2	1	2	1			1	1	
" unicolor	16	*54 1	1								
Enchelynassa canina		55 5	1		2	1					
Gymnothorax moluccensis		56 1									
" meleagris		57 11	4	5	3				1		
" bikinensis	11	*58 4		1	1						
" burgessis		59 29	10	5	6	1	1		1		
" melatremus	12	*60 1									
" thyrsoideus		61 1		2					1		
" richardsoni		3							3		
" pictus		62 7	2	1	2	1			2		
" bayeri	13	*63 *7	1								
" monostigmus		64 5		1	1						
" kidakidai		4							1		
" monochrous		65 3	1								
" javanicus		66 4		2							
Flavimarginatus		67 12	3	3	2	1			3		
" pindjalapes		68 8	1	1					2		
" buroelli		69 5	1	1	1	1			1		
" petelli		70 8	3	3	1	1					
" zonipectis		71 1									

		Bikini	Rongelap	Rongerik	Sinwetok	Kwajalein	Likiep	Marshall Is.	Guam	Saipan	Rota
Muraenidae (Continued)											
Gymnothorax gracilicaudus	72	5	5		2	1					
" margaritophorus	73	15	9	3	4	1			1	1	
" undulatus	74	4			2						
Anarchias allardicei	75	1		2					1	1	
" leucurus	76	11	6	1		1					
" cantonensis	77	2									
Rabula fusconaculata	14 *78	4	2	2	1	1					
" marshallensis	15 *79	1			1	1					
Uropterygius concolor	80	3							3	1	
" supraforatus	81	2	1								
" ~~dentatus~~ xanthopterus	82	10	5	1	2	1					
" marmoratus	83	1									
" microplerus	5								1		1
" fuscoguttatus	16 *84	4	1		1						
" reidi	85	2									
Belonidae											
Belone platyura	86	5							1		
Ablennes hians	87	2									
Strongylura gigantea	88	1									1
" incisa	89	3	1		1						
Rhaphidobelone robusta	17 *90	1	1						1		
Hemiramphidae											
Euleptorhamphus viride	91	2			1						
Hemiramphus marginatus	6									2	
Hyporhamphus laticeps	92	13	6	2	2	1		1	4		
" dussumieri	93	3	3	2	1		1	2	2		
" acutus	94	13	5		3						
Exocoetidae											
Parexocoetus mento	95		1								
Exocoetus volitans	96	1									
Cypselurus spilonopterus	97	1		1	1						
" antonicichi	18 *98	3			1			1			
" unicolor	99	1			1						
Prognichthys albimaculatus	7								1		
" sp.? (gilberti)	100				1						
Holocentridae											
Holotrachys lima	101	9	4	3	1						
Myripristis murdjan	102	12	1	1	4						2
" ferrudis	103	13	3	1					1		
" adustus	8								1		
" boudichai	19 *104	9	2	3	1		1		8		1
" argyromus	105	12	2	2	1				2		
" multradiatus	106	7	1		1						
" pralinius	107	4	1		1						
Holocentrus sammara	108	14	4		1				8		1
" diadema	109	6									
" laevis	110	5	4	1	1		1		1		
" vaslis	9								6		2
" locleogattatus	111	20	4	3	5	1			7		2

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshall Is.	Guam	Saipan	Rota
Holocentridae (Continued)											
Holocentrus tiereoides	112	1						1(m)			
" spinifer	113	12	6	3	3				10		3
" tiere	114	15		3	3	1			1		
" microstomus	115	23	8	3	4	1	1		3		
" diadema	116	10	8	2	2		1				
Aulostomidae											
Aulostomus chinensis	117	4	1				1		1		
Fistulariidae											
Fistularia petimba	118	19	3	2	3				4		
Solenostomidae											
Solenostomus armatus	119	1									
Syngnathidae											
~~Ichthyocampus bikiniensis~~ Ichthyocampus ~~davaoensis~~	120	*120	2								
" diacanthus	121		2								
Doryrhamphus. n. melanopleura	122		8	4	2						
Dunckerocampus dactyliophorus	123		1	1							
Micrognathus brevirostris	124		1						1	1	
" ~~brachyrhinus~~ matsubarae	125		1	1							
" brocki	21	*126	1								
Corythoichthys schultzi	12	*127	2	2							
" flavofasciatus conspicillatus	128	3	1	1					1		
" nigripectus	23	*129	1								
" intestinalis waitei	10							1	1	1	
Syngnathus roxweberi	130	1									
Sphyraenidae											
Sphyraena barracuda	131	1			1				1		1
" forsteri	132	5									
" genie	133	1									
" helleri	134			1	1						
Atherinidae											
Atherion elymus frey i	24	*11 ①							9	1	
" " esker	25	*135	2								
Alepatherina temminckii	132	7	4	1	1	1					
Allanetta ovalena	137	1	3				2	1	1		
Hypoatherina barnesi	26	*138	8	4	1	1		1			
Pranesus insularum whitei	27	*12 ②								1	
" pinguis		139	2						2		
Mugilidae											
Neomyxus chaptalii	140	17	4	3	5				1	1	
Crenimugil crenilabis	141	3			1				6		
Chelon vaigiensis	142	2	1						5		
" engeli	143	2							5		
Plicomugil labiosus	144	2						1			
Polynemidae											
Polydactylus sexfilis	145	3	1	1	1						
	146										
Kuhlidae											
Kuhlia rupestris	13								1	1	1
" taeniura	146	10	4	2	1			2	1	1	
" marginata	147	5		2	1						

therefore 2 #152 ½
" " 2+162 "

			Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshalls	Guam	Saipan	Rota
Serranidae												
Epinephelus merdurensis		148				2						
" Bohlerí	28	*149	1		1							
" summana		150	1	1								
" socialis		151	8	2	2	1			1(5)			
" horridus		152	2	2	1	1						1
" emoryi	29	*152	1									
" merra		153	24	11	4	7		1		12		3
" macrospilos		154	12	3	2	2	1			1		
" elongatus	30	*155	11	2	2	3	1					
" melanostigma	31	*156	1									
" fuscoguttatus		157	1			1						
" chlorostigma	32	*158				1		1			1	
" hexagonatus		159	21	4	3	6						3
" chlorocephalus	33	*160	14	1	2	2	1					
Anyperodon leucogrammus		161	5	2	3	2		1				
Variola louti		162	6	1	3	1						1
Pronicrops lanceolatus		162				3						
Plectropomus truncatus		163	2	1								
" leopardus		164	1	1					1			
Cephalopholis leopardus		165	9	3	4			1				
" argus		166	7	4	4	2				2		2
" wodelus		167	9	2	2	2	1	1	1			1
" miniatus		168	1									
Belonoperca chabanaudi		169	1									
Ypsigramma pallida		170	1									
" lineata	34	*171	2									
" brocki	35	*172		1								
Anthias heraldi	36	*173					1					
Grammistes sexlineatus		174	8	3	2	4	1			4		
Grammistops ocellata	37	*175	1									
Pseudochromidae												
Pseudochromis Taeniosoma		176	11	2	1	3				4		1
" aurea mershalensis	38	*177	7	5	4							
Pseudogramma polyacantha		178	22	11	3	3	1	1				
Aporops bilinearis		179	7		1	2						
Plesiops nigricans		180	2			1				5	2	1
" melas		181	13	10	3	6	1					
Pseudoplesiops rosae		182	4	2						3	2	
" revellei	39	*183	3									
" sargenti	40	*184	1	1				1				
Acanthoplesiops Hiatti	41	*185	4	1	1							
Apogonidae												
Siphamia fuscolineata	42	*186	2							2		
Apogon trimaculatus		187	1							2		
" lateralis		14								1		
" erythrinus		188	21	6	5	5	1					
" leptacanthus		15								1		
" gracilis		189	1	2	1		1					

			Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep.	Marshall Obs.	Guam	Saipan	Rota
Apogonidae (Continued)												
Cheilodipterus isostigma		207	8	2								
" truncatus		208				1						
Paramia quinquelineata		209	4	3		1	1					
Gymnapogon urospilotus	45	*210	6	1	2	1	1					
" gracilicauda	46	*211	4		1							
Priacanthidae												
Priacanthus hamrur		212		2	1							
" Cruentatus		213	6		2	1				1		
Coryphaenidae												
Coryphaena hippurus		214	1									
Carangidae												
Decapterus muroadsi		215	1									
Elagatis bipinnulatus		216	3						1			
Trachurops crumenophthalmus		217	1			1				1		
Gnathanodon speciosus	(3)	277							1(S)			
Trachinotus baileyi		218	1	1	1	1				1		
Trachinotus blochi		17								1		
Scomberoides sanctipetri		219	2	1								
Caranx melampygus		220	8	2	2	2				2		1
" lugubris		221	4			2						
" sexfasciatus		222	2							~~2~~		~~1~~
" ignobilis		18								2		1
Carangoides ferdau jordani		223	3	1	1	2						
" gilberti		224			1							
Lutjanidae												
Scolopsis cancellatus		19								5		
Lutjanus gibbus		225	3									
" kasmira		226	3	1	1							1
" monostigmus		227	3	2		1				2		2

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshall cls.	Guam	Saipan	Rota
Lutjanidae (Continued)											
Lutjanus bohar	228	1	3						1		
" vaigiensis	20								8		
Macolor niger	229	1							2		
Plectorhinchus nigrus	21								2		
Gnathodentex aureolineatus	230	12	3	1	1						
Monotaxis grandoculis	231	7	2	3	2						
Aprion virescens	232	1						1			
Aphareus furcatus	233	1									
Caesio x chrysozonus	234	2									
Pterocaesio tile	235	3	1								
" marri	47 #236	2									
" kuhlii	48 #237	1									
Lethrinus kallopterus	238	2	2								
" reticulatus	239	1									
" variegatus	240	3	2								
" microdon	241	2	1		1						1
" miniatus	242	1									
" rhodopterus	22								4		
" nebulosus	23								3		
" ornatus	24								1		
Leiognathidae											
Equula argyreus	243	1								1	
" oblongus	25								2		
Leiognathus equulus	26										
Emmelichthyidae											
Erythrocles ovalensis	244	9		1	2						1
Parapriacanthus beryciformes	245	1	1	1							
Kyphosidae											
Kyphosus cinerascens	246	1							1		
" vaigiensis	27								1		
Chaetodontidae											
Forcipiger longirostris	247	4									
Heniochus acuminatus (4)								1(5)			
" permutatus	248	5		1					1		
" monoceros	249				1						
Megaprotodon strigangulus	250	1	1						1		
Chaetodon reticulatus	251	13	1	1	2						
" klenii 5								1(5)			
" unimaculatus	252	3	2	1	2						
" meyeri 6								1(5)			
" ornatissimus	253	4									
" melannotus	254	1							1		
" trifasciatus	255	12	2	1	1		1		2		
" falcula	256	1							1		
" lunula	257	12		3	2				9	1	
" vagabundus	28								1		
" quadrimaculatus	258	2	1	1	1						
" citrinellus	259	18	7	4	6				7		1
" ephippium	260	11	1		4				4		

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshall Is	Guam	Saipan	Rota
Chaetodontidae (Continued)											
Chaetodon auriga	261	11	3	2	5				8		
" semeion	262			1							
" mertensii	263	3	1								
" punctatofasciatus	264	2	3		1						
Pomacanthus imperator	265	4							3		
Pygoplites diacanthus	266	3									
Centropyge flavissimus	267	1	9	3	3	2					
" heraldi	49	*268 2	2								
" woodheadi	7							1(S)			
" bispinosus	269	1									
Platacidae											
Platax orbicularis	29								2		
Zanclidae											
Zanclus cornutus	270	10	1		2				2		
" canescens	271	1									
Acanthuridae											
Ctenochaetus striatus	272	25	7	3	4	1			4		1
Acanthurus triostegus triostegus	273	29	6	3	6	1		1	11	1	5
" leucosternon	274	1									
" dussumieri	275	9			1	1					
" achilles	276	13	3	3	5						
" lineatus	277	1			1			~~1~~	3		5
" guttatus	278	10		1	4				1	1	2
" olivaceus	279	3		1	3				~~2~~	~~1~~	~~2~~
" nigricans	280	2	1	1	2				2		
" elongatus	281	32	11	5	10	1			1		
" fleeberi	282		1								
" philippinus	283		1								
" fuliginosus	30								5		
" mata	284			1	1						
Zebrasoma veliferum	285	2	2		2						
" flavescens	286	6	1								
Naso litturatus	287	22	7	2	6			1	3		
" hexacanthus	288	1									
" annulatus	289	1			1				1		
" brevirostris	290	1									
" unicornis	291	9	4	1	5	1			3		
" vlamingi	292	2	2	1							
Siganidae											
Siganus vulpinus	293	1									
" argenteus	294	2			2						
" spinus	31								24	3	1
" fuscescens	32								1		
" postratus	295	20	3	4	4				2		
" punctatus	296	3							3		
" doliatus	33								1		

		Dakini	Bompelah	Bongeila	Enivetoks	Kwajalein	Likiep	Majuro	Guam	Saipan	Rota
Mullidae											
Upeneus vittatus	34								2		
Parupeneus barberinus	297	6	3	1	2	1			3		
" bifasciatus	35								1		1
" trifasciatus	298	23	6	5	1	1	2		1		1
" pleurostigma	299	9	2								
" cyclostomus	300	11	4	1	1						1
" Cassiabanus	301	1									
Mulloidichthys samoensis	302	29	11	6	8				7		
" auriflamma	303	9	2	1	1						
" vanicolensis	304	8	3		4						
Pomacentridae											
Amphiprion perideraion	305	1	1								
" chrysogaster	306		1								
" tricinctus	307	* 1						1 (S)			
" sebae	8							1 (S)			
" bicinctus	308	4									
" melanopus	309	3		3							
Dascyllus aruanus	316	11	9	2	2		1		6	2	
" reticulatus	311	2	1				1				
" trimaculatus	312		1					2(S)	1		
Chromis lepidolepis	313	2									
" caeruleus	314	8	4	2	2	1			3	3	
" atripectoralis	315	* 2	2	2	3		1		3		
" dimidiatus	316	1									
" leucurus	317	3	1								
" ternatensis	318	1	1								
Abudefduf aureus	319					1					
" sordidus	320	13	2	1	3				4	2	
" saxatilis	36								3		
" septemfasciatus	321	7	2		2				7	3	2
" sexfasciatus	37								1	1	
" Curacao	322	1	1				1	1 (S)			
" leucozonus	323	6	5		2	1			10		
" amabilis	324	14	3		5	1			8		1
" glaucus	325	13	1	3	4	1		1	18	1	2
" biocellatus	326	14	5	4	5		1	1 (S)	9		
" johnstonianus	327	1	1		1						
" dickii	328	6	3	2		1			1		
" imparipennis	329	11	4	2	1						
" lacrymatus	330	17	7	3	1		1				
" leucozona	331	2				1			9	3	2
" khaksiensis	332	6		6	1						
Pomacentrus lividus	38								1		
" maricoma	333	7	6	3	3		1		4		
" albofasciatus	39								11		3
" jenkinsi	374	26	7	4	5	4					
" vaiuli	335	19	8	2	2		1				
" lavo	336	1	1								

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshall Is.	Guam	Saipan	Rota
Pomacentridae (Continued)											
Pomacentrus taceyi	*337	1	1								
" bifasciatus	40								1		
" melanopus	338		1								
" coelestis	339	2						1 (n)			
Labridae											
Choerodon anchorago	41								1		
Pteragogus guttatus	340		1								
~~Pseudocheilinops ataenia~~	*										
Cirrhilabrus temminckii	341	1	3								
Cymolutes praetextatus	342	1	2								
Epibulus insidiator	343	3	4	1	1						
Hetmorella ocellata	*344	5	1								
Xyrichtys taeniourus	345	3		3	3				1	1	
~~Nonipterorotus hypoflavus~~	346										
Nonipterorotus arbitensis	346	1									
" celebicus	347	1									
Cheilinus chlorourus	348	10	7	1	2		1		2		
" diagrammus	349	2									
" undulatus	42								1		
" fasciatus	350	4	1		1						
" celebicus	351	2									
" rhodochrous	352	6	2	1							1
" oxycephalus	353	10	6				1				
" trilobatus	354	16	8	3	3	1	1		3		
Pseudocheilinus hexataenia	355	5	5		1		1				
" octotaenia	356	1									
" tetrataenia	*357	17	7				1				
Labrichthys cyanotaenia	358		1		1				1		
Labroides dimidiatus	359	14	4		1	1			3	1	
" bicolor	360	5	1	1							
Cheilio inermis	43								2		
Coris gaimardi	361	16	2		1	1					
" aygula	362	9	5	1					1		
" variegata	363	1									
Thalassoma hardwicke	364	3	3	2	1		1				
" lunare	9							1 (s)			
" amblycyngma	365	13	2	3	3	1			3		
" lutescens	366	18	10	3	1	1	1	1 (n)			
" lucasanum marmar	367	3		2	1						
" quinquevittata	368	37	9	5	8	2	1		1	1	
" fuscum	369	1									1
" purpureum	370	4		1							
Gomphosus varius	371	21	8	3	2	1			1		
" tricolor	372	8	1	2	1						
Macropharyngodon pardalis	373	13	7	1	2						
" meleagris	374	8	3		1						
Stethojulis strigiventer	375		3					1 (s)	9	1	
" renardi	44								4		
" apilaris	376	27	10	6	4	1	1	1 (s)	11	1	1

		Belsini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshall Is.	Guam	Saipan	Rota
Labridae (Continued)											
Stethojulis linearis	*377	13	3	1	2			1(S)	2		
Hemigymnus fasciatus	378	5									
" melapterus	379	1					1				
Anampses caeruleopunctatus	380	8		2							
" twisti	381			1							
Halichoeres hortulanus	382	~~10~~ 19	4	4	1				1		
" trimaculatus	383	25	13	5	6		1		6		2
" margaritaceus	384	15	4	3	4	1			12		1
" biocellatus	*385	2	1								
" hoevenii	386	1					1				
" ballochroma	387				1		1				
" marginatus	388	22	7	4	7				3		1
Scaridae											
Chlorurus bicolor	389	7	4	1			1	1(S)			
" pulchellus	390	2	1								
Scarus microrhinos	391	13	5	3	2						
" garid	392	3	1					1(S)	1	1	
" lunula	393	1									
" formosus	394	2									
" schlegeli	395	~~3~~ 4		2							
" taeniurus	396	16	6	3	5		1	1(S)	4	1	1
" forsteri	397	1			2			2(S)	1	1	
" bordidus	398	23	10	4	6		1	[redacted]	4	1	1
" jonesi	399	9	6	3	6	1					
" globiceps	400	2		1	1	1					
" brevifilis	401	13	3	1	1			1(S)			
" ghobban	45									1	
" chlorodon	402	3	1		1				2		
" aeruginosus	403	3						1(S)	2	2	
Calotomus spinidens	404	10	5	1	1			1(S)	1	1	
Leptoscarus vaigiensis	46								1		
Cirrhitidae											
Cirrhitoides bimacula	405	2			1	1					
" rexfasciatus	*406	1									
Cirrhitus pinnulatus	407	9	1	1	2	1			1		
Gymnocirrhites arcatus	408	12	7		1	1	1				
Paracirrhites forsteri	409		1								
" hemistictus	410	3									
Mugiloididae											
Parapercis clathrata	411	4	7	1		1					
" cephalopunctatus	412	23	8	3	4	1					
" cylindrica	413	1	1								
Trichonotidae											
Limnichthys donaldsoni	*414	1		1	2						
Chalinodytes tauensis	415	5	1	1	1						

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshall Is.	Guam	Saipan	Rota
Clinidae											
Tripterygion hemimelas	416	5	2	3					1	1	
" minutus	417	3	1		1						
" brachylepis	*418	1									
Helcogramma gymnauchen	419	1	1	1							
Blenniidae											
Exallias brevis	420	8	2	2							
Cirripectes fuscoguttatus	*421	9		1	2	1					
" variolosus	422	17	3	2	3	1					
" sebae	423	12		3	4	1					
" quagga	424	10		1	4	1					
" stigmaticus	*425	1		2				2 (S) (1)			
Rhabdoblennius snowi	426	9	3	4	3	3			2		
" rhabdotrachelus	427	15	4	2	2				4	1	
Ecsenius olivifrontalis	*428	2	1								
Entomacrodus stelliger	47									1	
" thalassinus	429	2		1	1				1	1	
" insulalabiatus	*430	3							2	1	
" decussatus	48								1		
" cymatobiotus	*431	1			1						
" adleitensis	49								1	1	
~~" plurifilis plurifilis~~											
" plurifilis plurifilis	*50								3	1	Tinian (1) S.
" " marshallensis	*432	17	3	2	4	1					
" ninafooensis	51								1		
Istiblennius lineatus	433	5	2		3				1	2	1
" paulus	434	22	5	3	5	1			4		
" coronatus	435	12	3	4	2	1			1		1
" edentulus	436	7	9		8	5			2	2	
" cyanostigma	52								5	1	1
~~" aphisuchaleo~~	*										
" rolandi	*437	13	2	1	2						
Salarias fasciatus	53								2		
Fallacirripectes minutus	*438	2			2						
" wellsi	*439		1						2	1	Tinian (1) apparently (1)
Alticus saliens	54								2		agrees (1)
Praealticus natalis	59								2	1	Tinian (1)
" amboinensis litterosus	*56								3	1	
Petroscirtes mitratus					1						
Aspidontus taeniatus	440	3		1							
" fluctuans	441	2						1 (S)			
Runula laeinosoma	442		2			1					
Meiacanthus atrodorsalis	443		3								
Brotulidae	10							1 (S)			
Brotula townsendi	444	1									
Brosmophycis pautzkei	*445	2	1								
Dinematichthys iluocoeteoides	446	23	9	4	4	1			1		

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Lib. Isl.	Marshalls Gram	Saipan	Rota
Carapidae										
Jordanicus gracilis	447	1								
Encheliophis vermicularis	57							1		
Carapus mourlani	446	2		1					1	
" homei	449				1			3		
Schindleriidae										
Schindleria praematurus	450	1								
Callionymidae										
Diplogrammus goramensis	451	9	4	1	2					
Calliomymus calcicola	58							1		
Synchiropus laddi	*452	3	1	1	1					
" morrisoni	*453	1								
Scombridae										
Grammatorcynus bilineatus	454	3						1 (n)		
Acanthocybium solandri	455							1 (n)		
Katsuwonus pelamis	59 456							4 (n)		4
Neothunnus albacora macropterus	457	1						1 (n)		
Euthynnus affinis yaito	458	3						1 (n)		1
Gymnosarda nuda	459	1						1 (n)		
								1 (n)		
								1 (n)		
Stromateidae										
Pseneus sp.?	460							1 (n)		
Kraemeriidae										
Kraemeria samoensis	461			1						
" bryani	462			1						
Microdesmidae										
Gunnellichthys Pleurotaenia		1								
Allomicrodesmus dorotheae	*463	1						1 (s)	1	
Cleotridae										

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Lib. Isl.	Marshalls	Guam	Saipan	Rota
Scorpaenidae											
Taenianotus triacanthus	464	2			1						
Pterois radiata	465	7	1	1	1	1			1		
" antennata	466	3							1		
" volitans	60								1	2	
Brachirus bioccllatus	467	1			1						
Sebastapistes albobarbatus	468	10	3		2	1					
" mcadamsi	469	5	4		1						
" coralicola	470	5	2	3	2				2		
" cyanosoma	471		1						2		
Scorpaenopsis gibbosa	472	2	2		2				3		
Scorpaenodes kelloggi	473	2	1		1						
" guamensis	474	10	4	3	3				11	1	1
" parvipinnis	475	6		3		1					
Hypomacrus broksi	*476	1	1	1							
Dyanicja verrucosa	477				1					1	1
Caracanthidae											
Caracanthus unipinnus	478	16	7	2	1		1			1	
" maculatus	479	3	1	1		1					
Pentacerotidae											
Histiopterus typus	*480		1								
Pseudopentaceros wheeleri	*481	8	1	2							
Tylosurus crocodilus	*482	9	6	1	1						
" acus	*483	2	3	2	1						
Bothidae											
Bothus mancus	484	21	3	2	4	1			2		
" pantherinus	485	2	2	1	1				1		
Arnoglossus intermedius	486	1									
Pleuronectidae											
Samariscus triocellatus	*487	1	1					[illegible]			
Soleidae											
Aesopia heterorhinos	488		2								
Aseraggodes melanostictus	489					1					
" whitakeri	*490		1								
" smithi	*491		1								
Echeneidae											
Echeneis naucrates	492	5	1	[illegible]	3						
Remora remora	493	1									
Acanthuridae											
Pervagor melanocephalus marshallensis	*494	12	6	4	1						
" " johnstonianus	*										
Paramonacanthus oblongus	495		1								
" Cryptodon	496	1	1								

		Bikini	Rongelap	Rongerik	Eniwetok	Kwajalein	Likiep	Marshalls	Guam	Saipan	Rota
Aluteridae (Continued)											
Amanses scopas	497							1(J)			
" sandwichensis	498	4	2		1	1					
" Carolae	499	4	1	1	1						
Oxymonacanthus longirostris	500	6	7	1	3		1		1		
Stachaluteres Taylori	*501		1								
Paraluteres prionurus	502	1									
Alutera scripta	503	1									
Balistidae											
Canthidermis sufficosus	504	1									
Sufflamen capistratus	61										1
" chrysoptera	506	1	1								
" bursa	507	1									
Balistoides niger	11 5							1(S)			
" viridescens	508	1			1						
Pseudobalistes fuscus	509		1								
melichthys vidua	510					1		~~1~~ 1(S)			
Balistapus undulatus	511	6	2		1				2		
Rhinecanthus rectangulus	512	13	1	2	4	1	1				1
" aculeatus	513	10		2	1				10		2
Ostraciontidae											
Ostracion cubicus	514	2	4	1	2		1	1(M)			
" meleagris	515	3	2		3						
Lactoria fornasina	516	1									
Canthigasteridae											
Canthigaster amboinensis	517	2			2				2		
" solandri	518	18	8	3	6				9	1	
" jactator	519	1			1						
" Bennetti	62								1		
" sp.	12							1(S)			
Tetraodontidae											
Arothron meleagris	520	7	2	1	1	1	1		4		
" hispidus	521	1			1				1		
" immaculatus	63								1		
" nigropunctatus	522	13	3	2	2				3	1	
" alboreticulatus	523	3									
Diodontidae											
Diodon hystrix	524	5							2		
Gobiesocidae											
Liobranchio stria	*64								1		
Antennariidae											
Trichophryne rosaceus	525	1									
Antennarius altipinnis	65								1		
" coccineus	526	6						1(S)			

Table of Distribution of species recorded from the collections made in the Northern Marshall and Marianas Islands., Ca. 1946

I T I N E R A R Y, 1946

ITINERARY, 1946

Specimens collected by poison unless otherwise noted.

NORTH PACIFIC OCEAN

March 2, Station No. S-46-1, Lat. 20°17'45" N., Long. 162°28'45" W, trolling. Marr.

Probably July, Station No. S-46-394, Area between Bikini Atoll and Rongelap Atoll. Kohler.

Date not known, Station No. S-46-395, Lat. 09°00' North, Long. 168°00' East, plankton net at 4 feet below surface. Johnson.

BIKINI ATOLL

(March 11 to May 14)

March 11-31, Station No. S-46-2, lagoon, off Bikini Island to entrance at Enyu Island, hook and line. Brock, Marr and crew on U. S. S. Bowditch.

March 11, Station No. S-46-7, North side of lagoon, diving, to depth of 15 feet. Brock.

March 12, Station No. S-46-3, Enyu Island, lagoon, diving, spearing to depth of 30 feet. Brock.

March 16, Station No. S-46-8, Enyu Island, lagoon reef at channel entrance, poison, diving, and spear to depth of 20 feet. Schultz, Brock and Marr.

March 19, Station No. S-46-9, Erik Island, at western end, ocean reef. Schultz and Brock.

March 20, Station No. S-46-10, Erik Island on lagoon side, pool with sand and gravel bottom. Schultz and Brock.

March 22, Station No. S-46-15, Bikini Island, ocean reef. Schultz and Brock.

March 25, Station No. S-46-41, Bikini lagoon, eastern end, depth of 30 feet, diving. Brock.

March 26, Station No. S-46-42, Bikini lagoon, eastern end, coral heads at depths of 20 to 25 feet, diving, spearing. Brock and Schultz.

March 28, Station No. S-46-43, Bikini lagoon, Bowditch anchorage, 1 mile off Bikini Island, surface light. Schultz and Brock

March 29, Station No. S-46-44, Bikini lagoon, eastern end, 3 dredge hauls at 180 to 200 feet over coral bottom. Schultz ~~on AGS 14~~.

March 30, Station No. S-46-46, Bikini lagoon, Bowditch anchorage off Bikini Island, Surface light. Schultz and Brock.

April 1-24, Station No. S-46-72, Bikini lagoon, general region of channels to leeward, trolling, hook and line and spearing, Crew, officers, scientists on U. S. S. Bowditch.

April 1, Station No. S-46-47, Romuk Island, ocean reef. Schultz.

April 2, Station No. S-46-48, Romuk Island, lagoon reef. Schultz.

April 3, Station No. S-46-49, Namu Island, lagoon side, shallow tidal pools. Schultz.

April 3, Station No. S-46-50, Namu Island, lagoon reef. Schultz.

April 4, Station No. S-46-51, Namu Island, ocean reef. Schultz.

April 6, Station No. S-46-52, Boro Island, reef next to Boro Channel. Schultz and Brock.

April 6-7, Station No. S-46-53, Boro Channel, surface light. Schultz & Brock.

April 6, Station No. S-46-54, Boro Channel, hook and line, Schultz, Brock and crew of YMS413.

April 6, Station No. S-46-90, Ruji Channel, surface trolling. Brock

April 7, Station No. S-46-62, Boku Island, ocean reef next to Boro Channel, spearing to depth of 8 feet. Brock.

April 12, Station No. S-46-92, Bikini lagoon, Bowditch anchorage, surface light. Schultz.

April 13, Station No. S-46-93, Bikini lagoon, western half, 5 dredge hauls at ~~25~~ 150 to ~~30~~ 180 ~~fathoms~~ feet over coral, algae, and algal sand. Schultz.

April 15, Station No. S-46-94, Bokon Island, ocean reef, ~~channels near edge~~ at edge of channel. Schultz and Brock.

April 15, Station No. S-46-95, Bokon Island, ocean reef, high tidal pools. Schultz.

April 16, Station No. S-46-96, Airy Island, ocean reef, in surf. Schultz.

April 17, Station No. S-46-97, Airy Island, lagoon reef. Schultz.

April 17, Station No. S-46-110, Airy Island reef, picked out of algae. Taylor.

April 18, Station No. S-46-98, Cherry Island, ocean reef. Schultz.

April 18, Station No. S-46-99, Cherry Island, high tidal pools. Schultz.

April 23, Station No. S-46-108, Bikini lagoon, 1 mile south off west end of Bikini Island, dredge at ~~12~~ 72 ~~fathoms~~ feet. Morrison.

April 23, Station No. S-46-111, Bikini lagoon, ~~along northern side~~ northeastern end, ~~at~~ Bowditch anchorage, surface light at night. Schultz and Morrison.

April 24, Station No. S-46-112, Bikini lagoon, east end at Bowditch anchorage, surface light. Schultz.

April 24-25, Station No. S-46-115, Bikini lagoon, 4 miles south of western end of Bikini Island, dredge in ~~28~~ 168 ~~fathoms~~ feet. Morrison and Ladd.

April 25, Station No. S-46-114, Bikini lagoon at Bowditch anchorage, surface light at night. Schultz.

April 26, Station No. S-46-116, Bikini lagoon, east end, about 1 mile off northwestern end of Bikini Island, surface light at night. Schultz.

April 29, Station No. S-46-119, Bikini Island, off western end, lagoon side, Cali.

April, Station No. S-46-109, Bikini lagoon, dredge. Emory.

May 1, Station No. S-46-120, Bikini Island, 1-1/4 miles west, ocean reef in surf, Schultz.

May 1, Station No. S-46-153, Bikini lagoon, near middle, plankton net, 60 feet to surface. Johnson.

May 3, Station No. S-46-212, Bikini lagoon, 5 miles northwest of Enyu Island, plankton net at 6 feet. Johnson.

May 4, Station No. S-46-121, Erik Island, at western end, ocean reef. Schultz.

May 5, Station No. S-46-122, Boro Channel, hook and line at 240 feet. Kohler.

May 8, Station No. S-46-124, Enyu Island, ocean reef, near high tide line, under coral slabs. Schultz.

May 10, Station No. S-46-125, Bikini Island, south end, ocean reef. Schultz ~~and Gali~~.

May 11, Station No. S-46-126, Lagoon off Bikini Island, in sediment trap at 15 feet. Emory.

May 13-14, Station No. S-46-127, Romuk Island, reef, night spotting with flashlight, turning over rocks. Schultz.

May 14, Station No. S-46-128, Romuk Island at east end, lagoon reef. Schultz

(July 8 to July 16)

July 8, Station No. S-46-245, Boku Pass, in channel, surface light. Herald.

July 10, Station No. S-46-246, Amen Island, 1/2 mile directly south on lagoon reef, spearing, breaking coral heads. Brock, Herald and Kohler.

July 11, Station No. S-46-247, Bikini lagoon, submerged coral head, 4 miles southwest of Bikini Island, spearing, breaking coral heads. Brock, Herald, and Kohler.

July 11, Station No. S-46-249, Bikini lagoon, Bowditch anchorage, 3 miles northwest of Enyu Island, surface light. Herald.

July 12, Station No. S-46-250, Bikini lagoon, YMS463 anchorage off Yuro Island, searchlight and dipnets. Herald

July 13, Station No. S-46-251, Yuro Island, ocean reef. Herald.

July 13, Station No. S-46-252, Bikini lagoon, deep coral head at depth of 30-45 feet, Lat. 11°33'13" N., Long. 165°28'39" East, diving and spearing. Brock, Emory, Kohler.

July 16, Station No. S-46-253, Bikini Island, ocean reef. Herald.

(August 4 to August 27)

August 4, Station No. S-46-307, Amen Island, in lagoon, diving at depth of 30 feet. Brock, Herald and Kohler.

August 6, Station No. S-46-325, Enyu Island, in channel 100 yds. south of southern tip, fish trap at depth of 18 feet. Brock and Kohler.

August 7, Station No. S-46-308, Arji Island, 100 ~~yds~~ yards. off shore, lagoon coral area at depths from 0 to 40 feet, poison and spear. Brock and Herald.

August 9, Station No. S-46-390, Namu Island, 1 mile southeast, lagoon reef, poison and spear at depth of 30 to 45 feet. Brock and Herald.

August 12, Station No. S-46-332, Reer Island, northwest side, lagoon reef. Herald and Brock.

August 12, Station No. S-46-384, Boku Pass, 200 yds. off Oruk Island, hook and line at 54-60 feet. McChesney.

August 13, Station No. S-46-333, Enyu Island southeast end, ocean reef. Herald.

August 14, Station No. S-46-349, Bikini Island near northwest tip, ocean reef. Herald.

August 15, Station No. S-46-361, Cherry Island, ocean reef. Herald.

August 16, Station No. S-46-382, Oruk Island, ocean reef. Herald.

August 17, Station No. S-46-383, Boby Island at north end, ocean reef. Herald.

August 21, Station No. S-46-385, Bikini lagoon, Bowditch anchorage 3/4 miles due east of Rokar Island, hook and line. [redacted]h. Norton.

August 27, Station No. S-46-396, Bikini lagoon, Bowditch anchorage, 3/4 miles due east of Rokar Island, hook and line. Norton

ENIWETOK ATOLL

(May 19 to June 7)

May 19, Station No. S-46-158, Eniwetok lagoon, 1-1/2 miles off Eniwetok Island, surface light at night. Schultz.

May 20, Station No. S-46-159, Eniwetok Island, ocean reef in surf. Schultz

May 20-June 6, Station No. S-46-154, Eniwetok lagoon, off southeast end of Eniwetok Island, Bowditch anchorage, hook and line. Welsh and Schaefer.

May 21, Station No. S-46-174, Jieroru Island, ~~s~~ southeast corner, lagoon reef, Schultz.

May 22, Station No. S-46-175, Igurin Island, reef, turning over rocks. Schultz.

May 23, Station No. S-46-182, Eniwetok lagoon, ~~s~~ Bowditch anchorage off Eniwetok Island, surface light at night. Schultz.

May 24, Station No. S-46-183, Southwest Passage, leeward side of reef 2 miles south of Rigli Island, surface light at night. Schultz ~~and Galt~~.

May 25, Station No. S-46-184, Southwest Passage, leeward edge of reef, 4/5 mile south of Rigli Island, surface light at night. Schultz.

May 25, Station No. S-46-181, Chinieero Island, ocean reef. Taylor.

May 26-30, Station No. S-46-180, Southwest Passage, about 4/5 mile south of Rigli Island, hook and line, at depth of 30 feet. Schultz

May 28, Station No. S-46-186, Mui Island, ocean reef in surf. Schultz.

May 29, Station No. S-46-187, Giriinien Island, ocean reef in surf. Schultz.

May 29, Station No. S-46-188, Giriinien Island, high tidal pool. Schultz.

May 30, Station No. S-46-189, Rigli Island, lagoon reef. Schultz.

June 1, Station No. S-46-197, Teiteiripucchi Island, lagoon reef. Schultz.

June 2, Station No. S-46-195, Rujoru Island, lagoon reef. Schultz.

June 2, Station No. S-46-196, Rujoru Island, ocean reef. Morrison ~~and Cali~~.

June 3, Station No. S-46-198, Aaraanbiru Island, ocean reef. Schultz.

June 6, Station No. S-46-210, Eniwetok lagoon, Bowditch anchorage off Eniwetok Island, rod and reel. Norton.

June 7, Station No. S-46-209, Runit Island, ocean reef, face mask for observation. Schultz.

RONGELAP ATOLL

(June 16 to June 21)

June 16, Station No. S-46-213, Arbor Island, ~~a~~ western end, ocean reef. Schultz.

June 16, Station No. S-46-214, Arbor Island, ocean reef, high tidal pool. Schultz.

June 16-28, Station No. S-46-222, Rongelap lagoon, Bowditch anchorage, 1 mile off Rongelap Island, hook and line. Crew of Bowditch.

June 17, Station No. S-46-215, Eniaetok Island, ~~a~~ north end, lagoon reef. Schultz.

June 18, Station No. S-46-216, Enybarbar Island, ocean reef next to Enybarbar Channel. Schultz.

June 18, Station No. S-46-217, Enybarbar Island, ~~a~~ southern end, high tidal pool. Schultz.

June 19, Station No. S-46-220, Mellu Island, lagoon reef. Schultz and Herald.

June 20, Station No. S-46-221, Rongelap Island, lagoon side, picked off coral head. Kaley.

June 20, Station No. S-46-231, Kabelle Island, ~~a~~ north end, lagoon reef. Schultz and Herald.

June 21, Station No. S-46-232, Rongelap lagoon, 2 miles west of Bush Island, dredge, ~~in~~ at depth of 120 feet. Taylor.

(July 17 to August 1)

July 17, Station No. S-46-259, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light. at night Herald.

July 18, Station No. S-46-260, Tufa Island, ocean reef and lagoon, poison and spear. Brock and Herald.

July 19, Station No. S-46-259-A, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light. at night Herald.

July 20, Station No. S-46-267, Eniaetok Island, north end [redacted], lagoon reef. Herald and Brock.

July 20, Station No. S-46-259-B, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light. at night Herald.

July 21, Station No. S-46-389, Rongelap Island, lagoon side, spear at 10-20 feet. Brock.

July 21, Station No. S-46-259-D, Rongelap lagoon, YMS354 anchorage, 1/2 mile from Rongelap Island, hook and line at 42 feet. Kohler.

July 21, Station No. S-46-259-C, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light. at night Herald.

July 22, Station No. S-46-259-E, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light. at night Herald.

July 23, Station No. S-46-282, Rongelap Island southwest end, passageway, coral head at depths of 10 to 60 feet, spear. Brock, Herald and Kohler.

July 23, Station No. S-46-259-F, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light. at night Herald.

July 24, Station No. S-46-285, Kieshiechi Island at north end, lagoon coral head at depth of 20 feet, poison and spear. Brock and Herald.

July 25, Station No. S-46-286, Rongelap Island near north end, lagoon coral head at depth of 18 feet. Brock, Herald and Kohler.

July 25, Station No. S-46-331, Rongelap lagoon off village on Rongelap Island, hook and line at 60 feet. Kohler.

July 25, Station No. S-46-259-G, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light at night. Herald.

July 26, Station No. S-46-259-H, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light at night. Herald.

July 26, Station No. S-46-295, Rongelap Island, 1/2 mile north ~~of~~ west end, at Able Buoy, top of coral head at depth of 15 feet, spear. Brock.

July 27, Station No. S-46-259-I, Rongelap lagoon, Bowditch anchorage, 1/2 mile from Rongelap Island, surface light at night and hook and line. Herald.

July 28, Station No. S-46-300, Tufa Island, lagoon coral heads at depth of 28 feet, poison and spear. Brock and Herald.

July 29, Station No. S-46-301, Naen Island, ~~in~~ lagoon, surface light at night. Herald.

July 30, Station No. S-46-302, Naen Island, ~~on~~ west side, lagoon reef. Herald.

July 30, Station No. S-46-303, Yugui Island, ~~in~~ lagoon, surface light at night. Herald.

July 31, Station No. S-46-304, Yugui Island west side, ocean reef next to small boat passage. Herald.

July 31, Station No. S-46-305, Lomuilal Island, lagoon side, surface light at night. Herald.

August 1, Station No. S-46-306, Lomuilal Island, lagoon reef. Herald.

RONGERIK ATOLL

April 23, Station No. S-46-392, Rongerik lagoon, surface light at night. Marr.

April 24, Station No. S-46-113, Bock Island, ocean reef, high tidal pool. Brock and Marr.

April 25, Station No. S-46-393, off Rongerik Atoll, trolling. Marr.

June 27, Station No. S-46-237, Bock Island, ocean reef. Schultz and Herald.

June 28, Station No. S-46-238, Latoback Island, lagoon reef. Schultz & Herald.

June 28, Station No. S-46-239, Rongerik lagoon, off Latoback Island, hook and line at depth of 60 feet. Crew of YMS463.

June 28, Station No. S-46-242, Rongerik lagoon, 200 yds. off Eniwetak Island, surface light at night. Schultz and Herald.

June 29, Station No. S-46-241, Eniwetak Island, ocean reef in surf. Schultz and Herald.

July 20, Station No. S-46-276, Bock Pass, hook and line at 60 feet. Kohler.

KWAJALEIN ATOLL

September 1, Station No. S-46-397, Ennylabegan Island near southern end, lagoon reef. Herald.

ITINERARY, 1946

NORTH PACIFIC OCEAN

March 2, Station No. S-46-1, Lat. 20°17'45" N., Long. 162°28'45" W, trolling. Marr.

Date not known, Station No. S-46-335, Lat. 09°00' North, Long. 168°00' East, plankton net at 4 feet below surface. Johnson.

BIKINI ATOLL

(March 11 to May 14)

March 11-51, Station No. S-46-2, lagoon, off Bikini Island to entrance at Enyu Island, hook and line. Brock, Marr, Schultz and crew on U. S. S. Bowditch.

March 11, Station No. S-46-7, North side of lagoon, diving, to depth of 15 feet. Brock.

March 12, Station No. S-46-3, Enyu Island, lagoon, diving, spearing to depth of 30 feet. Brock.

March 13, Station No. S-46-8, Enyu Island, lagoon reef at channel entrance, poison, diving, and spear to depth fo 20 feet. Schultz, Brock and Marr.

March 19, Station No. S-46-9, Erik Island, at western end, ocean reef. Schultz and Brock.

March 20, Station No. S-46-10, Erik Island on lagoon side, large pool with sand and gravel bottom. Schultz and Brock.

March 22, Station No. S-46--15, Bikini Island, ocean reef. Schultz and Brock.

March 25, Station No. S-46-41, Bikini lagoon, eastern end, depth of 30 feet, diving. Brock.

March 26, Station No. S-46-42, Bikini lagoon, eastern end, coral heads at depths of 20 to 25 feet, diving, spearing. Brock and Schultz.

March 28, Station No. S-46-43, Bikini lagoon, Bowditch anchorage, 1 mile off Bikini Island, surface light. Schultz and Brock.

March 29, Station No. S-46-44, Bikini lagoon, eastern end, 3 dredge hauls at 180 to 200 feet over coral bottom. Schultz.

March 30, Station No. S-46-46, Bikini lagoon, Bowditch anchorage off Bikini Island, surface light at night. Schultz and Brock.

April 1, May 7, Station No. S-46-72, Bikini lagoon, general region of channels to leeward, trolling, hook and line and spearing. Crew, officers, scientists on U. S. S. Bowditch.

April 1, Station No. S-46-47, Romuk Island, ocean reef. Schultz.

April 2, Station No. S-46-48, Romuk Island, lagoon reef. Schultz.

April 3, Station No. S-46-49, Namu Island, lagoon side, shallow tidal pools. Schultz.

April 3, Station No. S-46-50, Namu Island, lagoon reef. Schultz.

April 4, Station No. S-46-51, Namu Island, ocean reef. Schultz.

April 6, Station No. S-46-52, Boro Island, reef next to Boro Channel. Schultz and Brock.

April 6-7, Station No. S-46-53, Boro Channel, surface light at night. Schultz and Brock.

April 6, Station No. S-46-54, Boro Channel, hook and line, Schultz, Brock and crew of YMS413.

April 6, Station No. S-46-90, Ruji Channel, surface trolling. Brock and Schultz.

April 7, Station No. S-46-62, Boku Island, ocean reef next to Boro Channel

spearing to depth of 8 feet. Brock.

April 12, Station No. S-46-92, Bikini lagoon, Bowditch anchorage, surface light. Schultz.

April 13, Station No. S-46-93, Bikini lagoon, western half, 5 dredge hauls at 150 to 180 feet over coral, algae, and algal sand. Schultz.

April 15, Station No. S-46-94, Bokon Island, ocean reef, at edge of Schultz and Brock.

April 15, Station No. S-46-95, Bokon Island, ocean reef, high tidal pools. Schultz.

April 16, Station No. S-46-96, Airy Island, ocean reef, in surf. Schultz.

April 17, Station No. S-46-97, Airy Island, lagoon reef. Schultz.

April 17, Station No. S-46-110, Airy Island reef, picked out of algae. Taylor.

April 18, Station No. S-46-98, Cherry Island, ocean reef. Schultz.

April 18, Station No. S-46-99, Cherry Island, high tidal pools. Schultz.

April 23, Station No. S-46-108, Bikini lagoon, 1 mile south off west end of Bikini Island, dredge at 72 feet. Morrison.

April 23, Station No. S-46-111, Bikini lagoon, northeastern end, Bowditch anchorage, surface light at night. Schultz and Morrison.

April 24, Station No. S-46-112, Bikini lagoon, east end at Bowditch anchorage, surface light at night. Schultz.

April 24-25, Station No. S-46-115, Bikini lagoon, 4 miles south of western end of Bikini Island, dredge in 168 feet. Morrison and Ladd.

April 25, Station No. S-46-114, Bikini lagoon, Bowditch anchorage, surface light at night. Schultz.

April 26, Station No. S-46-116, Bikini lagoon, east end, about 1 mile off northwestern end of Bikini Island, surface light at night. Schultz.

April 29, Station No. S-46-119, Bikini Island, off western end, lagoon side, Cali.

April, Station No. S-46-109, Bikini lagoon, dredge. Emory.

May 1, Station No. S-46-130, Bikini Island, 1-1/4 miles west, ocean reef in surf, Schultz.

May 1, Station No. S-46-153, Bikini lagoon, near middle, plankton net, 60 feet to surface. Johnson.

May 3, Station No. S-46-212, Bikini lagoon, 5 miles northwest of Enyu Island, plankton net at 6 feet. Johnson.

May 4, Station No. S-46-121, Erik Island, at western end, ocean reef. Schultz.

May 5, Station No. S-46-122, Boro Channel, hook and line at 240 feet. Kohler.

May 8, Station No. S-46-124, Enyu Island, ocean reef, near high tide line, under coral slabs. Schultz.

May 10, Station No. S-46-125, Bikini Island, south end, ocean reef. Schultz.

May 11, Station No. S-46-126, lagoon off Bikini Island, in sediment trap at 15 feet. Emory.

May 13-14, Station No. S-46-127, Romuk Island, reef, night spotting with flashlight, turning over rocks. Schultz.

May 14, Station No. S-46-128, Romuk Island east end, lagoon reef. Schultz.

(July 6 to July 16)

July 8, Station No. S-46-245, Boku Pass, in channel, surface light at night. Herald.

July 10, Station No. S-46-246, Amen Island, 1/2 mile directly south on lagoon reef, spearing, breaking coral heads. Brock, Herald and Kohler.

July 11, Station No. S-46-247, Bikini lagoon, submerged coral head, 4 miles southwest of Bikini Island, spearing, breaking coral heads. Brock, Herald, and Kohler.

July 11, Station No. S-46-249, Bikini lagoon, Bowditch anchorage, 3 miles northwest of Enyu Island, surface light at night. Herald.

July 12, Station No. S-46-250, Bikini lagoon, YMS463 anchorage off Yuro Island, searchlight and dipnets. Herald.

July 13, Station No. S-46-251, Yuro Island, ocean reef. Herald.

July 13, Station No. S-46-252, Bikini lagoon, deep coral head at depth of 30-45 feet, lat. 11°35'13" N., Long. 165°28'39" East, diving and spearing. Brock, Emory, Kohler.

July 16, Station No. S-46-255, Bikini Island, ocean reef. Herald.

(August 4 to August 27)

August 4, Station No. S-46-307, Aomen Island, lagoon, poison, diving at depth of 30 feet. Brock, Herald and Kohler.

August 6, Station No. S-46-325, Enyu Island, in channel 100 yards south of southern tip, fish trap at depth of 18 feet. Brock and Kohler.

August 7, Station No. S-46-308, Arji Island, 100 yards off shore, lagoon coral area, depths from 0 to 40 feet, poison and spear. Brock and Herald.

August 9, Station No. S-46-390, Namu Island, 1 mile southeast, lagoon reef, poison and spear depth of 30 to 45 feet. Brock and Herald.

August 12, Station No. S-46-332, Rear Island, northwest side, lagoon reef, Herald and Brock.

August 12, Station No. S-46-334, Boku Pass, 200 yards, off Oruk Island, hook and line at 54-60 feet. McChesney.

August 13, Station No. S-46-333, Enyu Island, southeast end, ocean reef, Herald.

August 14, Station No. S-46-349, Bikini Island rear northwest tip, ocean reef. Herald.

August 15, Station No. S-46-361, Cherry Island, ocean reef. Herald.

August 16, Station No. S-46-382, Oruk Island, ocean reef. Herald.

August 17, Station No. S-46-383, Eoby Island, north end, ocean reef. Herald.

August 21, Station No. S-46-335, Bikini lagoon, Bowditch anchorage 3/4 miles due east of Bokar Island, hook and line. Norton.

August 27, Station No. S-46-396, Bikini lagoon, Bowditch anchorage, 3/4 miles due east of Bokar Island, hook and line. Norton.

ENIWETOK ATOLL

(May 19 to June 7)

May 19, Station No. S-46-158, Eniwetok lagoon, 1-1/2 miles off Eniwetok Island, surface light at night. Schultz.

May 20, Station No. S-46-159, Eniwetok Island, ocean reef in surf. Schultz

May 20-June 6, Station No. S-46-154, Eniwetok lagoon, off southeast end of Eniwetok Island, Bowditch anchorage, hook and line. Welsh and Schaefer.

May 21, Station No. S-46-174, Jieroru Island, southeast corner, lagoon reef. Schultz.

May 22, Station No. S-46-175, Igurin Island, reef, turning over rocks. Schultz.

May 23, Station No. S-46-162, Eniwetok lagoon, Bowditch anchorage off Eniwetok Island, surface light at night. Schultz.

May 24, Station No. S-46-163, Southwest Passage, leeward side of reef 2 miles south of Rigili Island, surface light at night. Schultz.

May 25, Station No. S-46-164, Southwest Passage, leeward edge of reef, 4/5 mile south of Rigili Island, surface light at night. Schultz.

May 25, Station No. S-46-181, Chinieero Island, ocean reef. Taylor.

May 26-30, Station No. S-46-180, Southwest Passage, about 4/5 mile south of Rigili Island, hook and line, at depth of 30 feet. Schultz.

May 28, Station No. S-46-186, Mui Island, ocean reef in surf. Schultz.

May 29, Station No. S-46-187, Giriinien Island, ocean reef in surf. Schultz.

May 29, Station No. S-46-188, Giriinien Island, high tidal pool. Schultz.

May 30, Station No. S-46-189, Rigili Island, lagoon reef. Schultz.

June 1, Station No. S-46-197, Teitairipucchi Island, lagoon reef. Schultz.

June 2, Station No. S-46-195, Rujoru Island, lagoon reef. Schultz.

June 2, Station No. S-46-196, Rujoru Island, ocean reef. Morrison.

June 3, Station No. S-46-198, Aarasnbiru Island, ocean reef. Schultz.

June 6, Station No. S-46-210, Eniwetok lagoon, Bowditch anchorage off Eniwetok Island, rod and reel. Morton.

June 7, Station No. S-46-209, Sunit Island, ocean reef, face mask for observation. Schultz.

RONGRIAP ATOLL

(June 16 to June 21)

June 16, Station No. S-46-213, Arbor Island, western end, ocean reef. Schultz.

June 16, Station No. S-46-214, Arbor Island, ocean reef, high tidal pool. Schultz.

June 16-28, Station No. S-46-222, Rongelap lagoon, Bowditch anchorage, 1 mile off Rongelap Island, hook and line. Crew of Bowditch.

June 17, Station No. S-46-215, Eniaetok Island, north end, lagoon reef. Schultz.

June 18, Station No. S-46-216, Enyberbar Island, ocean reef next to Enyberbar Channel. Schultz.

June 18, Station No. S-46-217, Enyberbar Island, southern end, high tidal pool. Schultz.

June 19, Station No. S-46-270, Mella Island, lagoon reef. Schultz and Herald.

June 20, Station No. S-46-221, Rongelap Island, lagoon side, picked off coral head. Haley.

June 20, Station No. S-46-251, Kabelle Island, north end, lagoon reef. Schultz and Herald.

June 21, Station No. S-46-232, Rongelap lagoon, 2 miles west of Bush Island, dredge at depth of 120 feet. Taylor.

(July 17 to August 1)

July 17 to 27, Station No. S-46-259-A to I, Rongelap, lagoon, Bowditch anchorage, 1/2 mile off Rongelap Island, surface light at night. Herald.

July 18, Station No. S-46-260, Tufa Island, ocean and lagoon reef, poison and spear. Brock and Herald.

July 20, Station No. S-46-267, Eniaetok Island, north end, lagoon reef. Herald Brock.

July 21, Station No. S-46-289, Rongelap Island, lagoon side, spear at 10-20 feet. Brock.

July 21, Station No. S-46-280, Rongelap, lagoon, Bowditch anchorage 1/2 mile off Rongelap Island, hook and line, T. F. Kohler.

July 23, Station No. S-46-282, Rongelap Island southwest end, passageway, coral head at depths of 10 to 60 feet, spear. Brock, Herald and Kohler.

July 24, Station No. S-46-285, Kieshieshi Island at north end, lagoon coral head at depth of 20 feet, poison and spear. Brock and Herald.

July 25, Station No. S-46-286, Rongelap Island near north end, lagoon coral head at depth of 18 feet. Brock, Herald and Kohler.

July 25, Station No. S-46-331, Rongelap lagoon off village on Rongelap Island, hook and line at 60 feet. Kohler.

July 26, Station No. S-46-295, Rongelap Island, 1/2 mile north of western end, at Able Buoy, top of coral head at depth of 15 feet, spear. Brock.

July 28, Station No. S-46-300, Tufa Island, lagoon coral heads at depth of 28 feet, poison and spear. Brock and Herald.

July 29, Station No. S-46-301, Naem Island, lagoon, surface light at night. Herald.

July 30, Station No. S-46-302, Naem Island, west side, lagoon reef. Herald.

July 30, Station No. S-46-303, Yugui Island, lagoon, surface light at night. Herald.

July 31, Station No. S-46-304, Yugui Island west side, ocean reef next to small boat passage. Herald.

July 31, Station No. S-46-305, Lomuilal Island, lagoon side, surface light at night. Herald.

August 1, Station No. S-46-306, Lomuilal Island, lagoon reef. Herald.

RONGERIK ATOLL

April 23, Station No. S-46-292, Rongerik lagoon, surface light at night. Marr.

April 24, Station No. S-46-113, Bock Island, ocean reef, high tidal pool. Brock and Marr.

April 25, Station No. S-46-293, off Rongerik Atoll, trolling. Marr.

April 26, Station No. S-46-291, lagoon off Rongerik Island, surface light at night Marr.

April 27, Station No. S-46-294, Bock Pass, surface light at night. Marr.

June 27, Station No. S-46-237, Bock Island, ocean reef. Schultz and Herald.

June 28, Station No. S-46-238, Latoback Island, lagoon reef. Schultz & Herald.

June 28, Station No. S-46-239, Rongerik lagoon, off Latoback Island, hook and line at depth of 60 feet. Crew of YM3463.

June 28, Station No. S-46-242, Rongerik lagoon, 200 yards off Eniwetak Island, surface light at night. Schultz and Herald.

June 29, Station No. S-46-241, Eniwetak Island, ocean reef in surf. Schultz and Herald.

July 20, Station No. S-46-276, Book Pass, hook and line at 60 feet. Kohler.

KWAJALEIN ATOLL

September 1, Station No. S-45-397, Ennylabegan Island near southern end, lagoon reef. Herald.

BIKINI ATOLL, 1947

July 15, Station No. S-46-402, Bikini lagoon, half mile off Bikini Island, light at night. Myers, Schultz and O. Smith.

July 16, Station No. S-46-403, Enuan Island, in lagoon. Brock.

July 16-18, Station No. S-46-404, Enuan Island. Schultz, Morrison, and Bayer.

July 17, Station No. S-46-405, Enuan Island, channel reef at western end. Schultz, Brock, Myers, and Hiatt.

July 17, Station No. S-46-421, Enuan Island, lagoon, 20 feet depth. Brock and Hiatt.

July 18, Station No. S-46-422, between Enuan and Eoer Islands, large shallow tidal pond. Brock, Hiatt, Schultz, and Myers.

July 19, Station No. S-46-441, Enuan Island, ocean surf at eastern end. Schultz, Brock, Myers, and Hiatt.

July 21, Station No. S-46-442, halfway between Bikini and Aomn Islands, lagoon side of reef. Brock, Hiatt, and Schultz.

July 20, to August 10, Station No. S-46-458, lagoon half mile off Bikini Island, hook and line. Schultz and crew of U.S.S. Chilton

July 22, Station No. S-46-473, off leeward side Bikini Atoll and in Aran Pass. Marr and O. Smith.

July 27, Station No. S-46-474, Enyu Channel, L. Marquise and Lt. Cox.

July 27, Station No. S-46-475, ocean reef, Bikini Island. Schultz and Bayer.

July 28, Station No. S-46-476, coral head one and a half miles off Enen-Brick Channel at depth 30 feet. Brock.

July 30, Station No. 3-46-477, lagoon at U.S.S. Chilton anchorage one half mile off Bikini Island. Crew of Chilton.

July 29-30, Station No. 3-46-478, Bero Passage, hook and line, Brock Marr, O. Smith, and Schultz.

July 31, Station No. 3-46-482, ocean reef, western tip Bikini Island. Schultz.

August 1, Station No. 3-46-483, Enyu Island, ocean reef at channel entrance. Schultz, Brock, and Hiatt.

August 1, Station No. 3-46-505, ocean reef, western side Namu Island. Brock.

August 1-5, Station No. 3-46-507, western side of Bikini Atoll, Marr and O. Smith.

August 6, Station No. 3-46-508, Namu Island, lagoon reef. Schultz, Brock and Hiatt.

August 7, Station No. 3-1019, Namu Island, ocean reef and in surf. Brock, Hiatt, and Schultz.

August 7, Station No. 3-1040, Enyu Island, channel reef at 20 to 30 feet depth. Donaldson and Welander.

August 18, Station No. 3-42-533, Bikini Island, lagoon reef, western end of sandspit. Brock and Schultz.

August 18, Station No. 3-42-534, Bikini Island, shallow rock pools, western end of sandspit. Schultz and Brock.

August 16, Station No. 3-42-535, Bikini Island, ocean reef. Sayer.

August 19, Station No. 3-42-536, Namu Island, western end, ocean reef. Brock Schultz.

KWAJALEIN ATOLL, 1947

August 3, Station No. 3-46-506, Enubu Island, lagoon reef. Brock, Schultz,

and Donaldson.

RONGERIK ATOLL, 1947

August 14, Station No. S-1041, Iatoback Island, lagoon. Schultz, Brock, and Donaldson.

August 22, Station No. S-42-568, Rongerik Atoll, trolling. Marr.

JOHNSON ISLAND, 1947

August 28-29, Station S-42-569, reef along northern side of atoll. Schultz.

14030

on Two species of Elinephelus

Table. Certain characters were measured and these are recorded in percent of the standard length.

Species	Greatest depth of body */										Length of head							
	31	32	33	34	35	36	37	38	39	40	39	40	41	42	43	44	45	46
E. horridus	5	2	3	7	1	-	-	-	-	-	3	2	4	7	1	-	-	-
E. fuscoguttatus	1	1	2	1	1	3	-	1	-	1	1	-	5	1	-	2	1	1

Species	Length from snout tip to rear tip of maxillary.				
	20	21	22	23	24
E. horridus	6	8	3	-	-
E. fuscoguttatus	1	4	1	4	1

*/ The body becomes much deeper with increase in size.

14062

Table. Counts recorded for certain species of Promicrops and Epinephelus.

	Number of fin rays											Number of rakers (including rudiments) on first gill arch.																
	Dorsal						Pectoral					Above angle							At angle	Below angle								
	XI	XII	13	14	15	16	i,15	i,16	i,17	i,18	i,19	8	9	10	11	12	13	14	1	13	14	15	16	17	18	19	20	21	22
Promicrops																													
itaiara	18	-	-	-	14	4	-	-	1	32	3	1	5	9	2	-	-	-	17	-	6	9	2	-	-	-	-	-	-
lanceolatus	8	1	-	5	4	-	-	-	11	6	-		5	3	-	-	-	-	8	1	3	4	-	-	-	-	-	-	-
Epinephelus																													
tauvina	12	-	1	11	-	-	-	-	-	16	6	1	4	-	-	-	-	-	5	-	-	5	-	-	-	-	-	-	-
socialis	9	-	-	2	7	-	-	-	2	16	-	3	5	1	-	-	-	-	9	-	-	-	-	4	3	2	-	-	-
horridus	21	-	-	10	11	-	7	31	4	-	-	1	17	3	-	-	-	-	21	-	3	17	1	-	-	-	-	-	-
fuscoguttatus	11	-	-	11	-	-	-	-	3	18	1	-	-	-	1	7	2	1	11	-	-	-	1	3	1	2	3	-	1

	Total number of gill rakers												
	23	24	25	26	27	28	29	30	31	32	33	34	35
Promicrops													
itaiara	-	-	9	4	2	1	-	-	-	-	-	-	-
lanceolatus	1	1	4	2	-	-	-	-	-	-	-	-	-
Epinephelus													
tauvina	-	1	4	-	-	-	-	-	-	-	-	-	-
socialis	-	-	-	2	3	1	3	-	-	-	-	-	-
horridus	-	4	13	4	-	-	-	-	-	-	-	-	-
fuscoguttatus	-	-	-	-	-	-	1	2	2	2	1	2	1

1490

Table. Counts recorded for species in the genus Promicrops.

	Number of vertical scale rows above lateral line													
	92 93	94 95	96 97	98 99	100 101	102 103	104 105	106 107	108 109	110 111	112 113	114 115	116 117	118 119
itaiara	-	-	-	-	1	1	3	2	3	2	1	1	-	1
lanceolatus	1	2	-	2	1	-	-	2	1	-	-	-	-	-

	Number of scales from lateral line to:									
	Base of last dorsal spine			Midventral line in front of anus						
	12	13	14	30	31	32	33	34	35	36	37	38
itaiara	-	6	9	1	1	4	2	2	4	1	-	-
lanceolatus	2	3	3	-	-	3	-	2	1	1	-	1

	Number of pores in lateral line							
	56	57	58	59	60	61	62	63
itaiara	2	1	4	2	-	2	-	4
lanceolatus	2	1	1	2	1	-	-	-

Character Index: Soft dorsal, branched pectoral rays for both fins, and total gill rakers all added together for each specimen.

	72	73	74	75	76	77	78	79
itaiara	-	-	-	2	5	4	3	1
lanceolatus	1	1	3	2				

14152

Table. Measurements expressed in thousandths of the standard length recorded for the two species of Promicrops and arranged according to size.

Standard length	itaiara															lanceolatus									
	405	395	375	360 */	350	335 */	315	310 */	250	240	235	225	215	175	90	1778	1626	1613	330	270	208	195	150	120	1165
Head	425	405	395	420	414	424	420	402	408	404	421	422	390	412	420	364	352	394	428	419	428	405	414	408	420
Depth	341	339	333	320	343	325	340	319	324	313	328	351	335	352	345	386	385	393	328	322	327	338	360	325	326
Length maxillaries	190	197	192	192	194	197	197	187	196	192	196	209	181	186	217	-	227	-	197	189	197	190	193	196	193
" 3rd dorsal spine	101	91	88	94	94	96	98	103	96	117	115	116	98	109	139	-	-	-	97	89	101	113	120	114	116
Least depth caudal ~~peduncle~~	131	139	131	134	131	149	114	135	132	129	128	133	135	126	128	125	131	126	130	130	130	133	133	121	133
Length caud. ped. between vert lines.	148	177	163	145	157	143	149	152	172	154	153	171	140	146	139	142	172	-	152	148	144	154	160	154	137
Width of fleshy inter-orbital space.	86	91	80	83	89	90	81	77	92	79	72	91	74	71	72	100	104	102	94	85	82	82	87	79	77
Diameter of eye	57	46	47	46	49	45	53	44	52	54	52	50	53	57	78	25	29	31	52	50	58	51	57	67	69

*/ Eastern Pacific

peduncle

14156

Table. Detailed measurements were made on the 3 specimens of Promicrops lanceolatus caught at Eniwetok and these are recorded in thousandths of the lengths.

	Standard lengths			Total lengths		
Total length (T.L.) in mm.				1994	1880	2070
Standard length (S.L.) in mm.	1626	1613	1778			
Length of head	352	394	364	287	338	313
Greatest depth of body	385	393	386	319	338	331
Snout	85	79	93	70	63	80
Snout tip to lower preopercular angle	231	268	264	190	230	227
Eye	29	31	25	24	27	22
Least width of interorbital	104	102	100	86	88	86
Length of maxillary bone	185	189	164	153	162	141
Greatest width of maxillary bone	45	-	45	38	-	39
Length of maxillaries	227	-	-	185	-	-
Tip of lower jaw to anus	724	-	779	589	-	668
Greatest depth of head	262	-	322	217	-	276
Least depth of caudál peduncle	131	126	125	108	108	108
Length of caudal peduncle	172	142	-	140	122	-
Postorbital length of head	289	236	-	236	203	-
Longest pectoral ray	224	189	157	185	162	135
Longest pelvic ray	170	-	150	140	-	129
Longest soft anal ray	139	-	136	115	-	117
Longest anal (III) spine	62	-	50	51	-	43
Longest soft dorsal ray	123	-	121	102	-	104
Longest dorsal (VIII) spine	69	-	57	57	-	49

I have searched the literature for authentic records of large sized Promicrops, all of which are recorded in the following table. The reference to the literature will be found under the synonymy listed.

Table. Authentic records of Promicrops lanceolatus from the Indo-Pacific.

Authority or author & year	Total length in inches	Length to base of caudal fin in inches	Head length in inches	Weight in pounds	Greatest depth of body in inches	Locality
Boulenger 1895	80					Mauritius
" "	86					Madras
DeVis 1883	84				24	Moreton Bay, Queensland
Ramsey 1881	72		22		16	Near Brisbane, Australia.
" "	52			160		Frazer Is. Austr.
" "	120?					Frazer Is.
Alcock 1905	89or90			460		Diamond Harbor, River Hooghly, India.
Smith,H.M. 1933	74-4/5		24			Siam, Estuary Chantabun River.
" "	70-9/10	62-3/5		475		
Jordan, Evermann,&Tanaka 1927				360		Honolulu
Günther 1869			21			Seychelles
Weber and de Beaufort 1931	78-2/3			about 440		Sengkel, Atjeh
Photo*/ by Stead	80			413	30	Maclean,Clarence River, Australia
Photograph*/	78-1/2	64	22-1/2	337-1/2	25	Eniwetok Atoll
Photograph*/	74	63-1/2	25	341-1/2	25	Eniwetok Atoll
Photograph*/	81-1/2	70	25-1/2	414	27	Eniwetok Atoll

*/ Photographs in files of Division of Fishes, U. S. National Museum

SHARKS AND RADIOACTIVITY AREN'T ONLY DANGERS, EXPERT WARNS

There are some hazards in and around the waters of Bikini Lagoon that can't be located with a Geiger counter, Mr. V. E. Brock, Director for the Division of Fish and Game for Hawaii, told the CHILTON'S Science seminar Friday.

Most under-rated hazard, and therefore one of the worst dangers to personnel at Bikini, will be sunburn, Mr. Brock declared. "Regardless of how much shipboard tan you may acquire, there is always danger of getting a severe burn through over exposure."

Mr. Brock, who spent many months at Bikini last year with the Fish and Wildlife Service, then went on to point out other dangers that Bikini Scientific Resurvey personnel should be aware of.

Coral cuts, he warned, are easy to get and can be painful. Ordinarily, it's good policy to remain in the water after receiving a cut until the wound cleanses itself by bleeding.

He also warned that painful injuries can be received from sea urchins. Spines from these organisms are barbed and sharp. They usually break off at skin level and are very difficult to remove. Mr. Brock described several types of stinging coral. Some of these, he said, cause reactions like poison oak.

He described the sting of the Portugese Man of War, found in Bikini waters, as about like a burn from a red hot wire.

Many fish found in the lagoon and along Bikini reefs are capable of inflicting serious wounds. By exercising care in handling these fish, once they are out of the water, most injuries can be avoided, he said.

One of the most dangerous is the scorpion fish. Its spines are hollow like hypodermic needles. Poison is injected through the hollow spine when the victim's skin is punctured.

Eels, found in holes in the coral around the reefs, can inflict dangerous bites when disturbed, Mr. Brock said. He warned all Resurvey personnel to avoid cone shells. These contain an animal that is capable of inflicting a fatal sting, he said.

According to Mr. Brock, there are three types of sharks found around Bikini. Most common of these is the rather timid black tip type that abounds in shallow water. These rarely exceed six feet in length.

The second type found around Bikini is the gray shark that usually feeds in the deep water channels. Most dangerous of the Bikini sharks is the white tipped variety.

In addition to the three types mentioned, a tiger shark was captured last year at Bikini. Its stomach, when opened, was found to contain a pair of dungarees, ship's garbage, and fish enough to fill a good sized garbage can. (At this point it should be explained that the dungarees hadn't been occupied when eaten. They apparently were discards thrown overboard from some ship in the Crossroads fleet.)

While Mr. Brock believes that most sharks found around Bikini, under ordinary circumstances, will not attack swimmers, he points out that they all have the dental equipment to make a nasty bite.

Some fish taken at Bikini are poisonous if eaten. Others, when taken from the water decay rapidly and may quickly become unedible, he said. Because of the added dangers of radioactive materials in the area, no one will be permitted to eat fish taken in the area until a complete chemical study has been made of many specimens and the species is found to be completely free of radioactivity.

* * *

SEABEES FROM ANTARCTICA TO WARM UP AT BIKINI

Never scoff when you read that old Navy recruiting slogan "Join the Navy and see the world". At least 16 men now aboard the CHILTON do not.

Four months ago they were wearing ankle-length flannel underwear and fur-lined mittens. That was at Little America, where from January into March they served with Operation High-jump, the Antarctic expedition.

Today, like everyone else in the Bikini Scientific Resurvey project, they are wearing shorts and short sleeves and still perspiring. Antarctica seems a long way off.

And, as if two expeditions in one year weren't enough, one of the much traveled 16 was at Bikini in Operation Crossroads and five others saw duty inside the Arctic Circle within the past twelve months. Yes, some of these Navy boys really get around, geographically that is.

Fifteen of the Highjump veterans are members of the SeaBee detachment headed by Ensign L. G. Timberlake. They include: Chief Harry Zimmerman, of Cleveland, Ohio; Chief Herbert Scharrer, of Portland, Ore.; Donald R. Atkinson, MMCBE3; J. F. Borzillo, EMCBC2; H. C. Best, MMCBE3; Don Burch, MMCBE3; Harold Craven, SFCBW1; Robert Corner, MMCBE2; Elmer Hines, CMCBB2; Steward Heiner, SFCBR3; R. M. Hitchcox, MMCBE2; J.G. Thomas, MMCBE1; Jacob J. Tola, MMCBE3; S. J. Turner, CMCBB1; and Milton Wise, CMCBB1.

Chief Zimmerman, who reported to Highjump from Pt. Barrow, Alaska, where he worked with the SeaBee oil drilling crew, said he had time to squeeze in a 60 day leave between Highjump and the Bikini Scientific Resurvey.

Four of the Bikini bound SeaBees, Thomas, Tola, Turner, and Wise participated in Project Bluenose, the Greenland expedition, before they made the cruise to the South Pole. At Little America the SeaBees built the base that serviced land-based transport planes attached to Highjump.

Another much traveled man aboard the CHILTON is Chief John Dickison, of Monroe, Washington. Dickison, now attached to the X-Ray Division, participated in Operation Crossroads last year. Next he was assigned to Operation Highjump, and made the cruise to Antarctica aboard the submarine U.S.S. SENNETT. Now, he, too, is spending the summer at Bikini.

Enroute home from Antarctica the SeaBees aboard the U.S.S. MERRICK had a 28 day stopover in New Zealand while the ship had its rudder repaired. The rudder had been damaged in the ice off Little America.

The SeaBees aboard the other cargo ship, the U.S.S. YANCEY had an opportunity to stop off in Samoa for a look around. All the SeaBees from Operation Highjump, now aboard the CHILTON, reported from Port Hueneme, California.

RADIUM SEARCH PUTS COUNTERS TO TEST

The team of monitors that will steer Bikini Scientific Resurvey personnel away from and around whatever radiological hazards last summer's two Crossroads atomic bomb explosions may have left, had a full dress rehearsal Sunday.

Resurvey Project Officer, Captain C. L. Engleman sent the Geiger counter equipped teams scurrying through the CHILTON Sunday in search of a missing container of radium.

This radium, carried aboard the CHILTON for instrument calibration purposes, had been secreted earlier by CDR E. S. Gilfillan, Jr., Technical Director.

The first two monitors to locate the missing radium were LTJG B. D. LaMar and ENS J. T. Watson. They checked in with Captain Engleman 70 minutes later, proving that you can't hide radium on the CHILTON and get away with it.

Twenty minutes later all the monitors had located the radium where it had been secreted inside a furled flag attached to a halyard on the CHILTON'S mainmast.

Captain Engleman's "witch hunt" demonstrated that Geiger counters can sniff out radioactivity wherever it exists. One group of monitors including Mr. P. T. Ellard, 2nd LT C. B. MacKenzie, and 1st LT E. G. Halligan were convinced they had found the radium in the ship's tailor shop.

Their radiation source turned out to be a locker full of luminous buttons used during the war. Another monitor located a second radium instrument calibration source in a stateroom. Others picked up the x-ray equipment in the ship's dental office and Sick Bay.

The CHILTON'S skipper, Captain W. R. Lajeunesse, was so impressed with the bloodhound-like qualities of the Geiger counters that he's all for mixing up some radioactive potion for the stray rats in the ship's hold and sending monitors out looking for it. CDR Gilfillan, on hearing the suggestion, said monitors wouldn't be necessary. The diet itself would be lethal.

* * * * *

DR. SCHULTZ FINDS SIX FORMER STUDENTS IN RESURVEY GROUP

When Dr. L. P. Schultz, curator of fishes for the U. S. National Museum, addressed the CHILTON seminar last Thursday, he could look around the audience and count six former students.

All of them are now members of the University of Washington group, headed by Dr. L. R. Donaldson. The six, including Dr. Donaldson, who is now director of Applied Fishery at the University of Washington and Consultant for the Atomic Energy Commission, were students in the College of Fisheries at Seattle when Dr. Schultz was on the faculty there from 1928 to 1936.

During that time, Dr. Donaldson, Dr. A. D. Welander, Clarence Pautzke, R. C. Meigs, A. H. Seymour, and Richard Foster were students in his classes.

Pacific expeditions are no novelty to Dr. Schultz. He participated in Operation Crossroads last year, spending nearly five months at Bikini. In 1939 Dr. Schultz accompanied a Navy expedition to the Phoenix Islands and did much research on tropical fishes there.

In addition to his three Pacific trips, Dr. Schultz, in 1942, participated in a scientific expedition to Venezuela.

LT COL HEFFERNON JOINS EXPEDITION

A week ago the Bikini Scientific Resurvey was just another headline in the morning paper to LT COL George A. Heffernon, (MC), U. S. Army.

Then orders arrived from Washington, D. C. and Dr. Heffernon started packing his bags for a six weeks stay in the Central Pacific, He is now aboard the U.S.S. CHILTON as an official observor for the Army Medical Corps.

His normal duty station is Tripler General Hospital in Honolulu, where he is deputy commander. During the Bikini operations Dr. Heffernon will work with various scientific groups to gain an overall familiarity with the work and findings of the Bikini Scientific Resurvey.

* * *

WE TIP OUR BASEBALL CAPS TO THE STOREKEEPERS

Up to now the Bikini Scientific Resurvey has been one tough, high priority job after another to Staff Supply Officer LT Dan Carr and his two assistants, first class storekeepers L. S. Dymond and R. W. Satterlee.

From the day they reported to the CHILTON in San Diego, these men have been working overtime ordering, checking, packing, loading, re-ordering, and issuing equipment.

Typical of many of the jobs completed since leaving Pearl Harbor, LT Carr and his two storekeepers have issued 384 pairs of khaki shorts, 396 khaki shirts, 1566 pairs of green trousers, 1612 green shirts, 796 pairs of white shorts, 584 baseball caps, 119 sun helmets, and 596 pairs of heavy work shoes.

* * *

NO WASTE HERE

Here's a bit of news that should cheer the taxpayers. Not an inch of material trimmed off trousers and shirts by the CHILTON'S Tailor during the past week will be wasted.

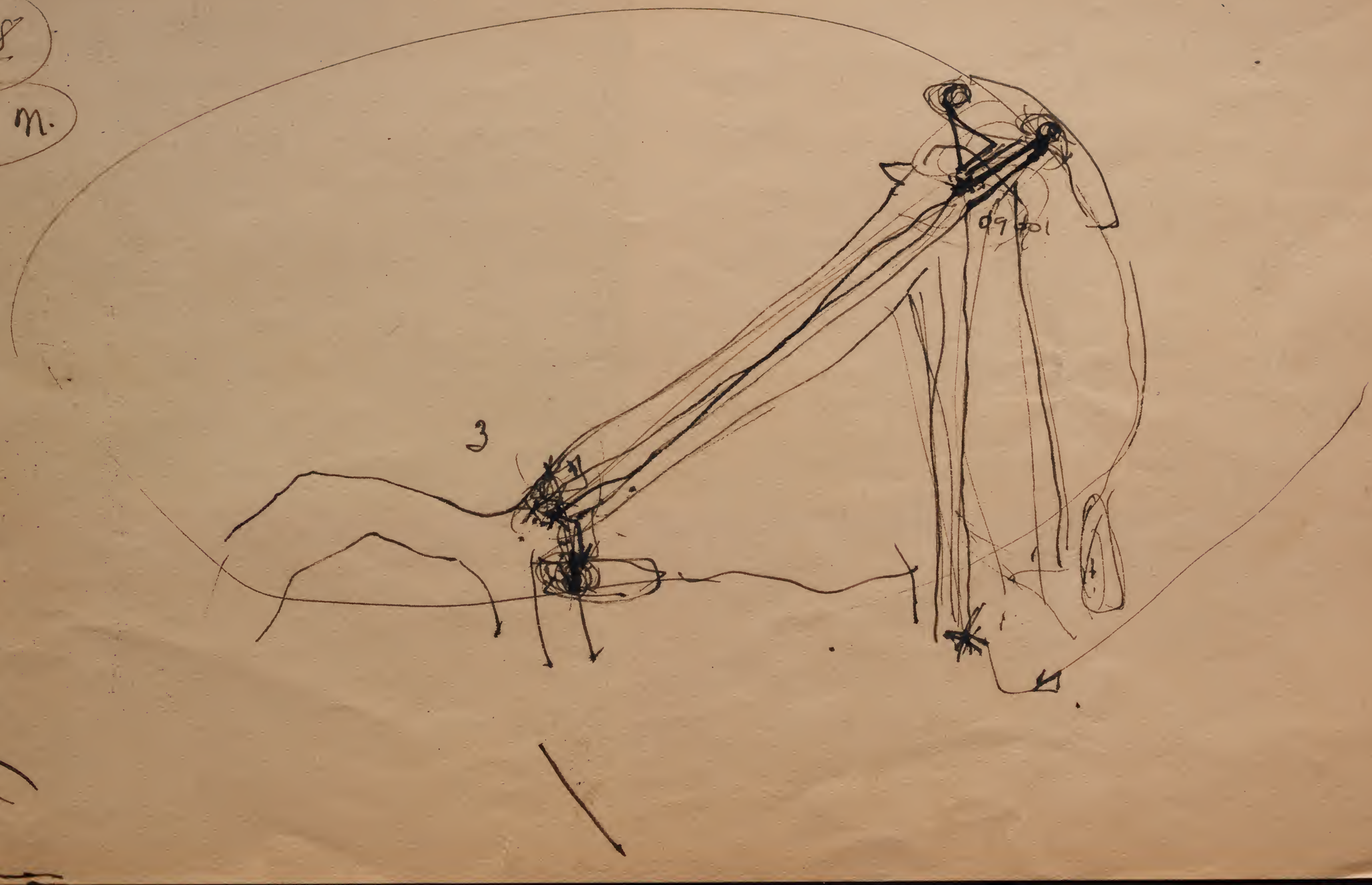
Every scrap has been saved and the rags will be supplied to the various laboratories aboard ship for use by scientists and their assistants. LCDR Bob Reaser, X-Ray Division Officer, estimates that the material from the shirts and trousers will weigh at least 200 pounds.

Stalemate — By Harold Jones, S1 — Common Scents

12 ~ 14
1

6 ~ 8

6 ~ 8 M.



Clifford B. Sehlhorst,
Commander, U.S. Navy,
Commanding U.S.S. Bowditch

NAVY DEPARTMENT
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON, 25, D.C.

Op-21-1-ns
Serial 12U1P21

6 February 1946

From: Chief of Naval Operations
To : Mr. Leonard Peter Schultz

Subj: Authorization to Take Passage in Naval Vessels and Naval Aircraft Proceeding to or in the Bikini Atoll, Marshall Islands Area.

1. You are hereby authorized to take passage in naval vessels and naval aircraft designated by the proper authority as a U.S. Naval Technician representing the U.S. National Museum at the request of the Bureau of Ships. You are accredited to the Commander in Chief, United States Pacific Fleet for the purpose of performing technical duties in connection with a biological survey in the above mentioned area.

2. Upon arrival in and departure from a naval vessel, command, or station, this letter should be endorsed by the commanding officer. Upon completion of this assignment, this letter should be returned to the Chief of Naval Operations via the Bureau of Ships.

/s/ R.K. BASSETT
By direction

Clifford A. Barnes, Lt. Comdr. USNR

CERTIFIED TO BE A TRUE COPY: